

6930

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<small>Form 504</small> U. S. COAST AND GEODETIC SURVEY DEPARTMENT OF COMMERCE DESCRIPTIVE REPORT	
Type of Survey	Hydrographic
Field No.	Office No. H6930
LOCALITY	
State	Virginia
General locality	Hampton Roads
Locality	Off Willoughby Spit
<u>194 4</u> CHIEF OF PARTY J. H. Brittain & W. R. Porter	
LIBRARY & ARCHIVES	
DATE	

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-6930

Field No. _____

State Virginia

General locality Off Willoughby Spit

Locality Hampton Roads

Scale 1:5,000 Date of survey Feb. - March, 1944

Instructions dated Director's Supplemental Instructions, Proj. CS-305, Feb. 8, 1944

Vessel Launches FARIS and HILGARD

Chief of party W. R. Porter and J. H. Brittain

Surveyed by Ship's Officers

Soundings taken by fathometer, graphic recorder, hand lead, ~~wire~~ sounding pole

Protracted by L. E. Klinefelter

Soundings penciled by L. E. Klinefelter and M. E. Byrd

Soundings in ~~fathoms~~ ^{& tenths} feet at MLW ~~MLW~~

REMARKS: This sheet was processed at the Norfolk Processing Office.

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet No. H6930

Project CS-305 - 1944

HILGARD and FARIS

AUTHORITY:

This survey was executed under Supplemental Instructions dated February 8, 1944. ✓

SCOPE:

The extension of hydrographic work on Project CS-305 in the vicinity of the Naval Operating Base, Norfolk, Virginia to include the shoal areas eastward of the channel between the Naval Operating Base and Fort Wool and Willoughby Spit; also the shoal area along the northern side of Willoughby Spit. ✓

CONTROL:

Existing triangulation and topography executed at this time along the north side of Willoughby Spit and along the sea wall at the Naval Operating Base furnished the necessary control. ✓

SURVEY METHODS:

Standard survey procedure was employed throughout this survey, with the hydrography being executed on a scale of 1:5,000. A skiff propelled by outboard motors was used in the shoaler areas and Launch No. 102 was used for those portions with greater depths. All sounding lines were accurately controlled by sextant fixes at two-minute intervals or less taken from a point close to the fish or sounding pole. A sounding pole was used for all depths under seven feet with soundings every ten seconds on twenty-five meter lines. For depths of seven feet or over, for the most part, a portable 808 depth recorder was used. ✓

Bar checks were taken two or three times daily. Good bar tests were had throughout. ✓

A portable tide gage was maintained at Willoughby Spit for use in reducing the soundings for the boat sheet. ✓

All reducers were entered and the soundings reduced and plotted on the boat sheet to the nearest tenth of a foot. ✓

All aids to navigation within the area surveyed were located by sextant fixes and are properly indexed in the sounding records. ✓

Pole sdgs were specified in instructions

generally sdgs linked to even foot

DESCRIPTIVE REPORT

Project CS-305 - 1944

DISCREPANCIES and CROSSINGS:

Only small discrepancies were obtained and the crossings were good. The agreement between the sounding pole and depth recorder was very close. The small and constant discrepancy between fathometer and pole soundings is probably due to the fact that the pole was read from the stern of the launch and the stern wave had built up to a few tenths of a foot, and also to the fact that the pole would tend to sink a small distance into the soft bottom. In the shoal area south of Fort Wool, the bottom is very lumpy and irregular. It is believed that here, particularly, the depth recorder developed the area more accurately than did the sounding pole because critical depths which show on the fathogram are more apt to be missed with the sounding pole. *fathometer sdgs favored in selection of sdgs*

COMPARISON:

H 6832 + 6893 (1943)
Junction with Project CS-305, 1943 is good. There has been considerable shoaling since previous hydrographic surveys. *Nov. or W. 1/10/43 5 PM*

STATISTICS:

	HILGARD	FARIS	Total
	Skiff	Launch No. 102	
Area in square miles (nautical)			2.3
Number of soundings (other than continuous)	7603	4168	11771
Number of positions	1145	1551	2696
Miles of sounding lines (nautical)	113.7	205.1	318.8

All data and records pertaining to this project have been forwarded to the Norfolk Processing Office.

Respectfully submitted,

J. H. Brittain
William R. Porter
J. H. Brittain & W. R. Porter
Lieut. Comdrs. USC&GS

ADDENDUM

SHEET H-6930

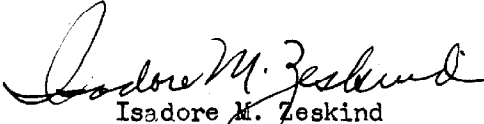
Crossings:

There are numerous instances of 1 to ~~2~~ ft. discrepancies in crossings. These discrepancies usually occur when soundings obtained by the fathometer cross those obtained by either the lead line or sounding pole. The lead line or sounding pole soundings are usually deeper.

For example, where g and b (red) days are contiguous, it is generally found that the soundings on g day, which were obtained by the sounding pole, are 1 foot deeper than those obtained on b day, which were obtained by the fathometer. Notes in sounding records indicate difficulty was experienced with the sounding pole sinking in the mud and water boiling up on it. (See pages 23 and 27, Volume # 2).


Above differences not apparent on sheet

Respectfully submitted,


Isadore M. Zeskind
Associate Cartographic Engineer

Norfolk, Va.
April 28, 1944

Approved and Forwarded


Paul C. Whitney
Supervisor, S. E. District

GEOGRAPHIC NAMES

Survey No. H-6930

Name on Survey	Source									
	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
Virginia		(for title)						USGB		1
Hampton Roads		"	"							2
Willoughby Bay								"		3
Willoughby Spit		(location of tide staff)						"		4
Sewall Point										5
Sewall Point Spit										6
Fort Wool										7
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Heck (on 8) 26/47

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets; sounding vols.; wire drag vols.;
bomb vols.; graphic recorder rolls;
special reports, etc.
.....

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	..2696
Number of positions checked	..34..
Number of positions revised	..5..
Number of soundings recorded	..21000 (estimate)
Number of soundings revised (refers to depth only)	..considerable pole snags were dropped out - reading deep
Number of soundings erroneously spaced	..18..
Number of signals erroneously plotted or transferred
Topographic details	Time ..8 hrs
Junctions	Time ..12 hrs
Verification of soundings from graphic record	Time ..8 hrs

Verification by...*A.P. STIRNI*.....Total time ..106 hrs Date *3/12/47*...

Review by ..*R.H. Carstens*..... Time 24 hr Date *3/26/47*...

LAC
HME

Form 719
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 10, 1944

~~Division of Hydrography and Topography:~~

✓ Division of Charts: Attention: H. R. EDMONSTON

Plane of reference approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 6930

Locality Hampton Roads: Willoughby Spit, Va.

Chief of Party: J. H. Brittain and W. R. Porter in 1944

Plane of reference is mean low water reading

2.1 ft. on tide staff at Willoughby Spit

10.2 ft. below B. M. 2

Height of mean high water above plane of reference is 2.5 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-6930

FIELD NO. -----

Virginia, Hampton Roads, Off Willoughby Spit
Surveyed in Feb. - Mar., 1944 Scale 1:5,000
Project No. CS-305

Soundings:

Control:

Sounding Pole
808 Fathometer

Sextant fixes on shore signals

Chief of Party - J. H. Brittain and W. R. Porter
Surveyed by - J. H. Brittain, W. R. Porter, R. H. Tryon,
R. H. Brown and G. H. Short
Protracted by - L. E. Klinefelter and M. E. Byrd
Soundings plotted by - L. E. Klinefelter and M. E. Byrd
Verified and inked by - A. R. Stirni
Reviewed by - R. H. Carstens, March 26, 1947
Inspected by - H. W. Murray

1. Shoreline and Signals

The shoreline and signals originate with planetable survey T-6959 (1944), quadrangle T-8303 (1944), and triangulation of 1943.

2. Sounding Line Crossings

Depths at crossings are in satisfactory agreement. Differences of 1 foot mentioned on pages 2 and 3 of the Descriptive Report are seldom apparent on the smooth sheet because the development was generally so intense that many of the deeper pole soundings could be omitted.

3. Depth Curves and Bottom Configuration

The usual depth curves were satisfactorily drawn. The 3-ft. curve has been added to emphasize bottom relief.

In the shoal areas between Willoughby Spit and Fort Wool the bottom is fairly lumpy. Over the rest of the survey the bottom is generally smooth.

4. Junctions with Contemporary Surveys

In the area overlapped by H-6832 (1943) on the southeast and H-6833 (1943) on the southwest, there are differences of 1 ft. with present depths, together with differences in depth curves; butt junctions are therefore shown with these surveys.

There are no contemporary surveys on the west, north and east. Charted depths are in good agreement with present soundings in these adjoining areas.

5. Comparison with Prior Surveys

H-446 (1854) 1:40,000
H-447 (1854) 1:20,000
H-1188 (1873) 1:20,000
H-2861 (1907) 1:10,000
H-3923 (1916-17) 1:30,000
H-3982 (1917) 1:5,000
H-4040 (1918) 1:20,000
H-5000 (1929) 1:10,000

These prior surveys cover the area of the present survey wholly or in part.

Since the earliest surveys in 1854, the end of Willoughby Spit has advanced westward about 0.15 mile, and the shoal area between Willoughby Spit and Fort Wool has extended northward about 0.5 mile and westward about 0.15 mile. Prior depths on this shoal differ with present depths by 2 to 5 ft. In other areas prior depths are generally within 1 ft. of present depths.

Subsequent to the 1917 surveys, channels have been dredged in the vicinities of lat. $36^{\circ} 58.9'$, long. $76^{\circ} 18.6'$; lat. $36^{\circ} 57.8'$, long. $76^{\circ} 18.1'$; and along the waterfront on the south.

The present survey adequately reveals all the essential hydrographic information in this area, and except for supplementary bottom characteristics retained from H-5000, is adequate to supersede these prior surveys within the common area.

6. Comparison with Chart 400 (Latest print date 12/9/46)A. Hydrography

The charted soundings originate principally with the present survey before verification and review and with Public Works Ep. 40310 (1945). A few soundings are charted from contemporary surveys which overlap a portion of the area. Differences with the present smooth sheet are minor.

The dashed outline charted in the vicinity of lat. $36^{\circ} 58.2'$, long. $76^{\circ} 16.9'$ represent the ruins of a pier or breakwater first located on T-2632 (1903). Though a specific investigation was not made on the present survey, no indication of the ruins were found on the regular system of 20 meter lines and it is probable that the ruins are now nonexistent.

B. Aids to Navigation

The present survey positions of aids to navigation are in satisfactory agreement with the charted positions and adequately mark the features intended.

- (1) It is noted that buoy "C-1" charted in lat. $36^{\circ} 59.08'$, long. $76^{\circ} 18.58'$, was located on the present survey about 100 meters northeast of the charted position but it still adequately marks the entrance to the dredged cut.
- (2) The beacons charted in the vicinity of lat. $36^{\circ} 57.42'$, long. $76^{\circ} 18.61'$ from N. to M. 31 (1944) were established subsequent to the present survey.
- (3) The present survey spar buoy "54N" in lat. $36^{\circ} 58.28'$, long. $76^{\circ} 18.35'$, was removed subsequent to the present survey and is no longer charted. Notice of the removal of the buoy was published in N. to M. 41 (1944).
- (4) Buoy C-5 located in lat. $36^{\circ} 58.66'$, long. $76^{\circ} 18.53'$ on the present survey has been subsequently replaced by the lighted buoy FLW "5" as reported in N. to M. 26 (1944).

C. Controlling Depths

Present depths are in harmony with the charted controlling depths in the channel dredged in part through the outer end of Sewall Point Spit to Willoughby Bay. The controlling depth was charted from the present survey before verification and review.

7. Condition of Survey

The field plotting was accurately accomplished.

The sounding records and Descriptive Report are complete and comprehensive.

8. Compliance with Project Instructions

The present survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

This is an excellent basic survey and no additional work is recommended.

Examined and approved:



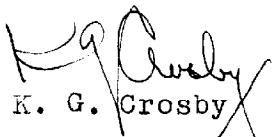
I. E. Rittenburg

Chief, Nautical Chart Branch



C. M. Durgin

Chief, Division of Charts



K. G. Crosby

Chief, Section of Hydrography



C. K. Green

Chief, Division of Coastal Surveys.

NAUTICAL CHARTS BRANCH

SURVEY NO. 6930

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4/27/47	400	H. E. MacLean	Before After Verification and Review <i>completely applied</i>
10/1/47	1222	F. G. McGinn	Before After Verification and Review " "
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

Partially applied, before V. & R., to Cht. 1222 June 15, 1944 R.P.
Applied, before V. & R., to Cht. 400 June 28, 1944 R.P.